Express Mail Label No. EV 744944325 US
Docket No. S1022.81172US00
Mailed : September 28, 2006

AMENDMENTS TO THE CLAIMS

Applicant submits below a complete listing of the current claims, including marked-up claims with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims

1. (Currently amended) A method of COFDM demodulation of a signal received from a transmit channel, comprising ~~the steps of~~:

performing a fast Fourier transform of the received signal in a window ~~(W)~~ corresponding to a symbol ~~(S)~~, each symbol comprising several carriers modulated in phase and/or in amplitude, some of which are pilots, and being adjacent to a guard interval ~~(Tg)~~ reproducing part of the symbol;

providing a set of estimated values of the pulse response in module from the pilots;

determining coefficients, each coefficient being obtained from the product of said set and of a filtering function ~~(FE)~~ for a determined relative position of the filtering function with respect to said set;

determining the maximum coefficient and the corresponding relative position; and

positioning said window according to said relative position corresponding to the maximum coefficient,

the filtering function comprising a central portion of constant amplitude ~~(LMAX)~~ and of duration equal to the duration of the guard interval, surrounded with non-zero decreasing sides.

2. (Currently amended) The method of claim 1, wherein ~~the step of~~ providing the set of estimated values of the pulse response in module comprises ~~a step of provision of~~ providing a set of estimated values of the frequency response of the transmit channel based on the pilots, and a step of transformation of said set of estimated values of the frequency response by inverse fast Fourier transform.

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3. (Currently amended) The method of claim 1, wherein, for each relative position of the filtering function ~~(FE)~~ with respect to the set of estimated values of the module of the pulse response, the coefficient is determined based on the sum of the products of the module of the estimated values of the pulse response and of the filtering function.

4. (Currently amended) The method of claim 1, wherein the set of estimated values of the module of the pulse response is periodic, the filtering function ~~(FE)~~ having a total width smaller than the period of the set of estimated values of the module of the pulse response.

5. (Currently amended) The method of claim 1, wherein the filtering function ~~(FE)~~ is a stepped function.

6. (Currently amended) The method of claim 5, wherein each side comprises at least a first and a second adjacent steps each having a non-zero amplitude strictly smaller than the amplitude ~~(LMAX)~~ of the central portion, the double of the amplitude of the second step being greater than the sum of the amplitude of the central portion and of the amplitude of the first step.

7. (Original) The method of claim 6, wherein the duration of the second step is smaller than the duration of the first step.

8. (Currently amended) The method of claim 1, wherein the filtering function ~~(FE)~~ is symmetrical.

9. (Currently amended) A COFDM demodulator intended to receive a signal received from a transmit channel, comprising:

a circuit of fast Fourier transform ~~(20)~~ of the received signal in a window ~~(W)~~ corresponding to a symbol ~~(S)~~, each symbol comprising several carriers modulated in phase and/or in amplitude, some of which are pilots, and being adjacent to a guard interval ~~(Tg)~~ reproducing part of the symbol;

a circuit ~~(22)~~ for providing a set of estimated values of the module of the pulse response from the pilots;

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a circuit ~~(22)~~ for determining coefficients, each coefficient being obtained from the product of said set and of a filtering function ~~(FE)~~ for a determined relative position of the filtering function with respect to said set;

a circuit ~~(22)~~ for determining the maximum coefficient and the corresponding relative position; and

a circuit ~~(22)~~ for positioning said window according to said relative position corresponding to the maximum coefficient,

the filtering function comprising a central portion of constant amplitude ~~(LMAX)~~ and of duration equal to the duration of the guard interval, surrounded with non-zero decreasing sides.